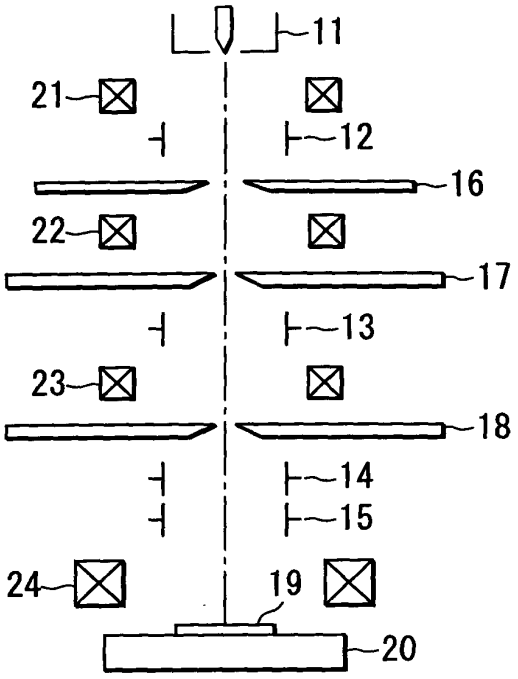

FIG. 1

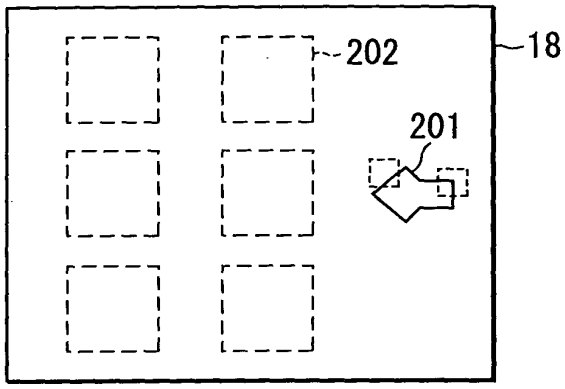

FIG. 2

FIG.4

Character code 17~21:VSB 22~:Scan-projection

VSB

1-20	21-40	41-52	53-64
Character code	Blank	Blank	Blank
X	X	Lx	Ly

Scan-projection

Character code	Nscan	px	py
X	Y	Nx	Ny

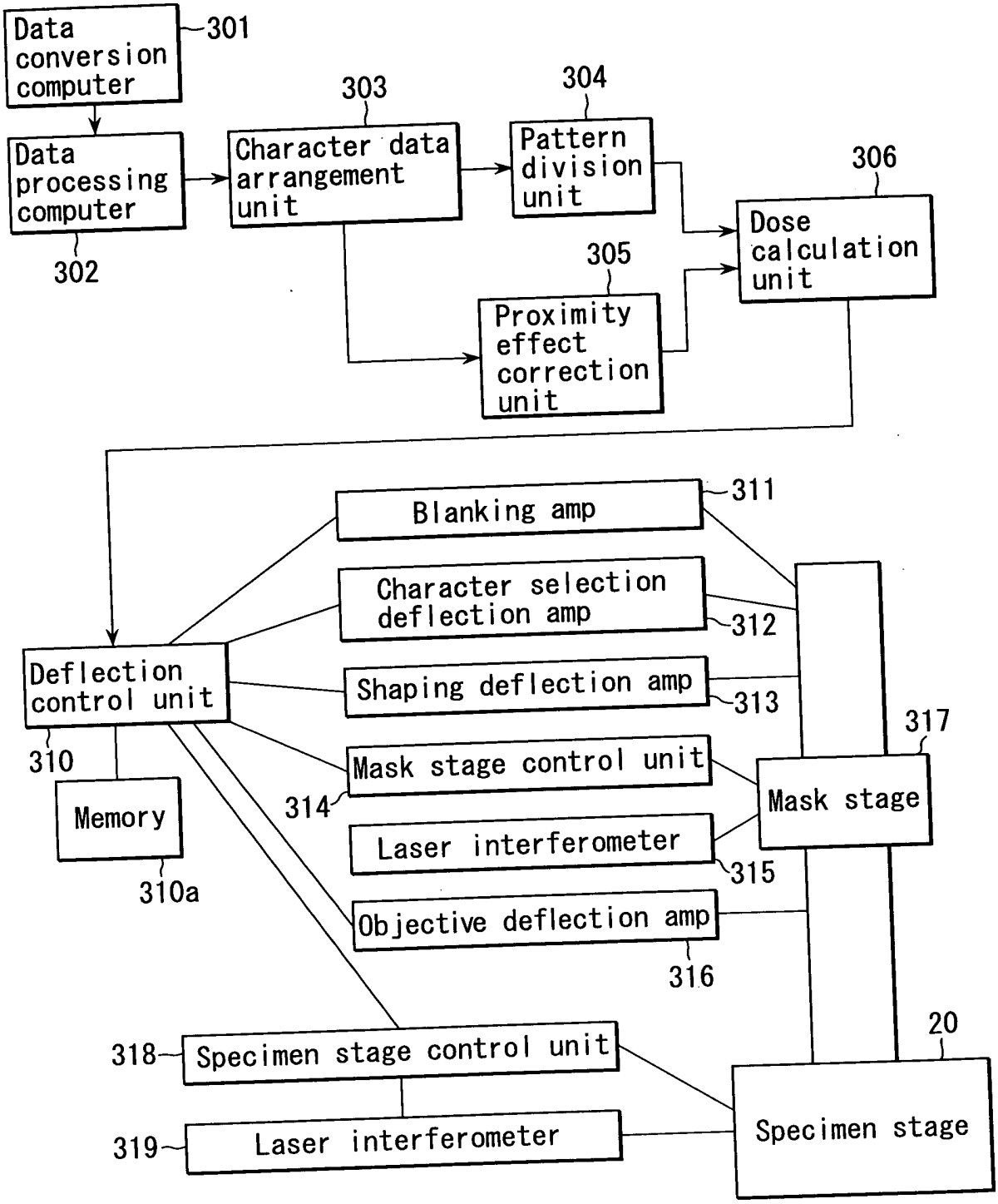
Data conversion computer
301
Data processing computer
302
303
Character data arrangement unit
304
Pattern division unit
306
Dose calculation unit
305
Proximity effect correction unit
Blanking amp
311
Character selection deflection amp
312
Shaping deflection amp
313
Deflection control unit
310
Memory
310a
Mask stage control unit
314
Laser interferometer
315
Objective deflection amp
316
317
Mask stage
318
Specimen stage control unit
319
Laser interferometer
20
Specimen stage

FIG. 3

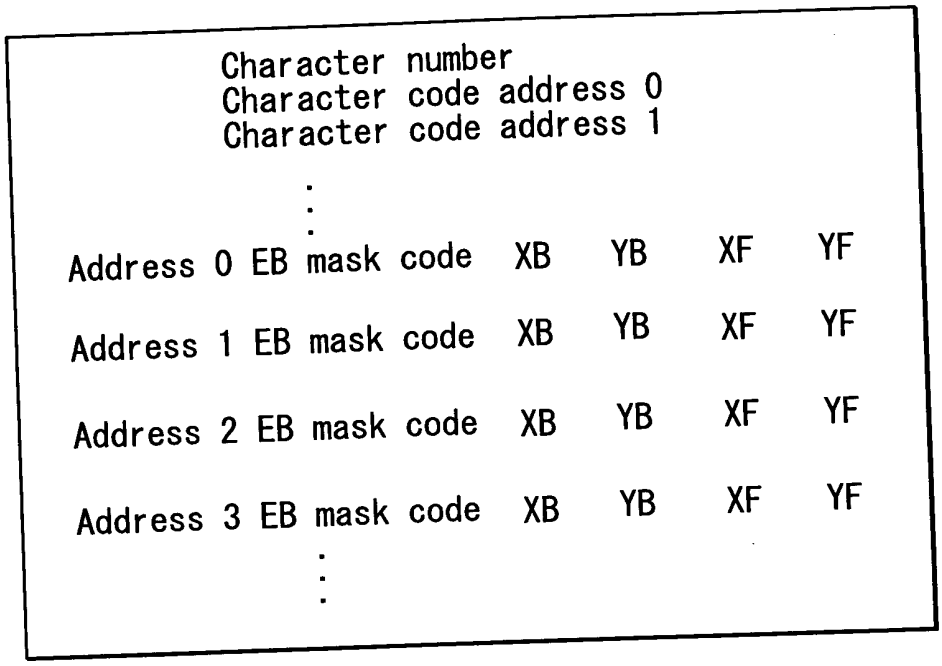
Character number
Character code address 0
Character code address 1
Address 0 EB mask code XB YB XF YF
Address 1 EB mask code XB YB XF YF
Address 2 EB mask code XB YB XF YF
Address 3 EB mask code XB YB XF YF

FIG. 5

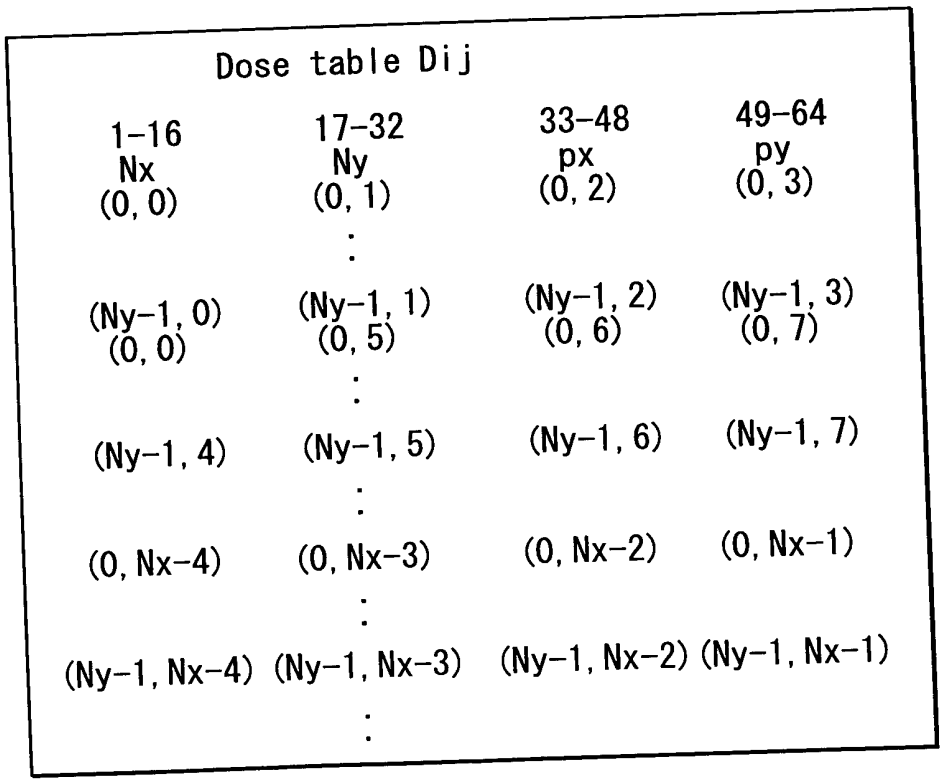
Dose table Dij
1-16
Nx
(0, 0)
17-32
Ny
(0, 1)
33-48
px
(0, 2)
49-64
py
(0, 3)
(Ny-1, 0)
(0, 0)
(Ny-1, 1)
(0, 5)
(Ny-1, 2)
(0, 6)
(Ny-1, 3)
(0, 7)
(Ny-1, 4)
(Ny-1, 5)
(Ny-1, 6)
(Ny-1, 7)
(0, Nx-4)
(0, Nx-3)
(0, Nx-2)
(0, Nx-1)
(Ny-1, Nx-4)
(Ny-1, Nx-3)
(Ny-1, Nx-2)
(Ny-1, Nx-1)

FIG. 8

Transfer pattern data

1-20	21-42	43-64	
Number of scanned character (NF)			
Address for data on character code 22	x-coordinate on EB mask at the origin of data on character code 22	y-coordinate on EB mask at the origin of data on character code 22	
Address for data on character code 23	x-coordinate on EB mask at the origin of data on character code 23	y-coordinate on EB mask at the origin of data on character code 23	
⋮			
Address for data on character code NF+21	x-coordinate on EB mask at the origin of data on character code NF+21	y-coordinate on EB mask at the origin of data on character code NF+21	

Address for character code 22

1-16	17-32	18-48	49-64
S	xG	yG	
nx	ny	px	py
(0, 0)	(0, 1)	(0, 2)	(0, 3)
(1, 0)	(1, 1)	(1, 2)	(1, 3)
(2, 0)	(2, 1)	(2, 2)	(2, 3)
⋮			
(ny-1, 0)	(ny-1, 1)	(ny-1, 2)	(ny-1, 3)
(0, 4)	(0, 5)	(0, 6)	(0, 7)
(ny-1, 4)	(ny-1, 5)	(ny-1, 6)	(ny-1, 7)
(0, 8)	(0, 9)	(0, 10)	(0, 10)
⋮			

Address for character code 23

(ny-1, nx-4)	(ny-1, nx-3)	(ny-1, nx-2)	(ny-1, nx-1)
S	xG	yG	
nx	ny	sx	sy
(0, 0)	(0, 1)	(0, 2)	(0, 3)
(1, 0)	(1, 1)	(1, 2)	(1, 3)
(2, 0)	(2, 1)	(2, 2)	(2, 3)
⋮			
(ny-1, 0)	(ny-1, 1)	(ny-1, 2)	(ny-1, 3)
(0, 4)	(0, 5)	(0, 6)	(0, 7)
⋮			
(ny-1, 4)	(ny-1, 5)	(ny-1, 6)	(ny-1, 7)
(0, 8)	(0, 9)	(0, 10)	(0, 10)
⋮			
(ny-1, nx-4)	(ny-1, nx-3)	(ny-1, nx-2)	(ny-1, nx-1)
⋮			

FIG. 6

Transfer pattern data

1-20	21-42	43-64	
Number of scanned character (NF)			
Address for data on character code 22	x-coordinate on EB mask at the origin of data on character code 22	y-coordinate on EB mask at the origin of data on character code 22	
Address for data on character code 23	x-coordinate on EB mask at the origin of data on character code 23	y-coordinate on EB mask at the origin of data on character code 23	
⋮			
Address for data on character code NF+21	x-coordinate on EB mask at the origin of data on character code NF+21	y-coordinate on EB mask at the origin of data on character code NF+21	

Address for character code 22

1-16	17-32	18-48	49-64
Number of character (n)	Total area	xG	yG
Area of character 0	x0	y0	
nx	ny	px	px
Area of character 1	x0	y0	
nx	ny	px	px
Area of character 2	x0	y0	
nx	ny	px	py
⋮			
Area of character n-1	x0	y0	
nx	ny	px	
Blank			

Address for character code 23

Number of character (n)	S	xG	yG
Area of character 0	x0	y0	
nx	ny	px	py
Area of character 2	x0	y0	
nx	ny	px	py
⋮			
Area of character n-1	x0	y0	
nx	ny	px	py
Blank			

FIG. 7

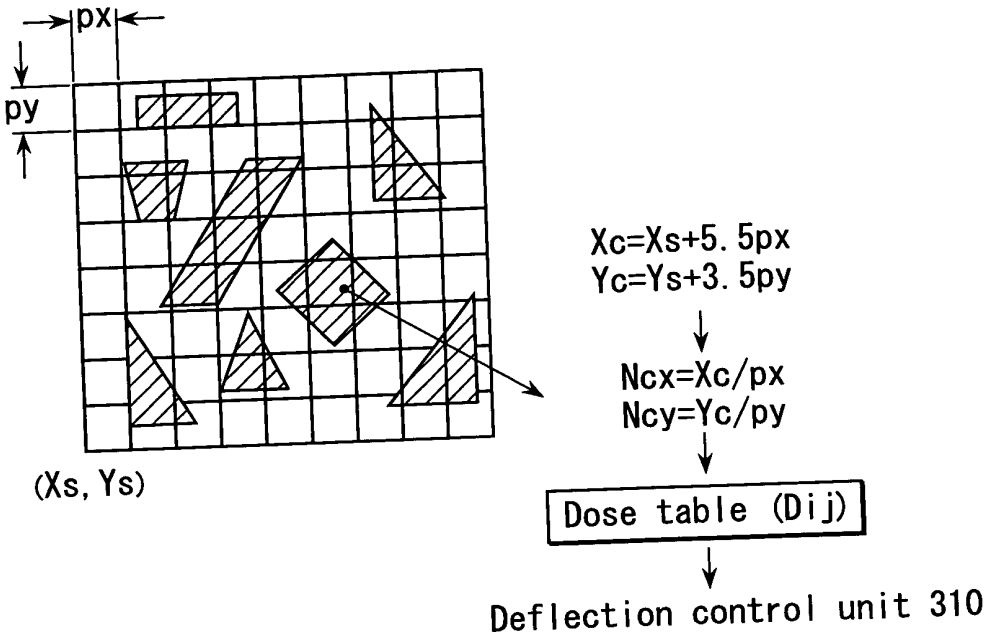
px
py
(Xs, Ys)
Xc=Xs+5.5px
Yc=Ys+3.5py
Ncx=Xc/px
Ncy=Yc/py
Dose table (Dij)
Deflection control unit 310

FIG. 9

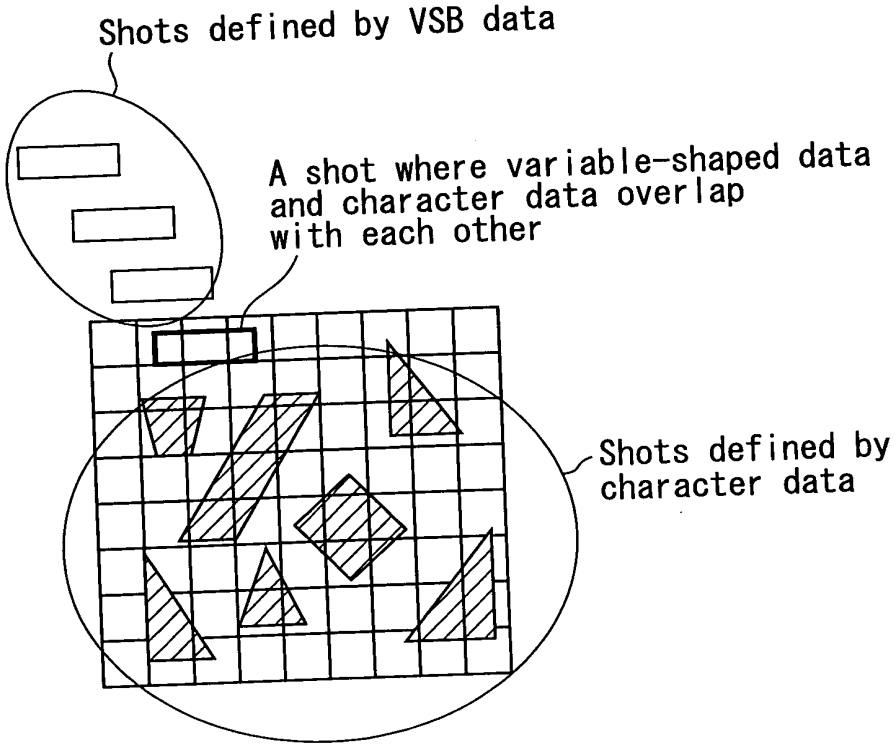
Shots defined by VSB data
A shot where variable-shaped data and character data overlap with each other
Shots defined by character data

FIG. 10